

## ARTICLE

# Using Digital Concept Maps to Distinguish Between Young Refugees' Challenges

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Digital media are beneficial for research of complex refugee issues, as they allow refugees to express their personal experiences of complex issues in ways that are not restricted by language barriers or limited in authenticity, while also offering researchers a way to systematically compare refugees' varied experiences. We used a computerised concept mapping task to ask 74 young refugees (teenagers and young adults), from three separately recruited samples, to think about their experiences with various challenges they might face during settlement, distinguishing between their challenges in terms of size. Our analyses focused on one major challenge in Australia, learning the English language, and how it related to ten other challenges of resettlement. The three samples differed in educational setting, cultural background, age, and time in Australia. These refugees faced multiple challenges in their lives. Regardless of differences between the groups, the 74 shared a single pattern of experiences in which English language was substantially bigger, and more frequently endorsed, than other challenges. The three samples differed in how they described their experiences with their English language challenges. Our findings suggest a need for more support learning the English language, even for those who might be assumed to have good levels of conversational or academic English. This support needs to extend beyond the 510 hours of support received upon arrival in the country. Findings also suggest that such support could help young refugees overcome other challenges as they settle in Australia, especially in their academic, social, and employment experiences.

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**Keywords:** Refugees; Challenges; Computerised concept mapping task; English Language

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## Introduction

Digital media are beneficial for research about issues facing refugees as they allow refugees to express their experiences of complex topics without being restricted by language barriers or limited authenticity within the research practice (e.g., Sharp *et al.* 2007; Rodriguez-Jimenez & Gifford 2010; Lenette *et al.* 2015; Lawrence *et al.* 2016). In this paper, we used a digital media tool, a computerised concept mapping task, to ask young refugees (teenagers and young adults) about the multiple challenges they might face during settlement. We first describe the Australian context and the challenges that can occur for refugees, then outline the ways in which digital media overcome language issues and promote the participants' authentic role in research. Using the data generated by participants' concept maps, we focus our analysis on one major challenge for refugees in Australia: learning the English language. Specifically, we investigate the magnitude of their English language challenges relative to ten other challenges, and refugee youths' descriptions of their experiences with their English language challenges.

## Background: Challenges for young refugees in Australia

Young refugees face many difficulties as they settle in their new country. Well-documented difficulties include dealing with family separation that occurred during or prior to the refugee journey (Harris & Marlowe 2011), discrimination and social isolation (Sharp *et al.* 2007; Correa-Velez *et al.* 2012), financial issues (Fozdar & Hartley 2013), and learning the English language (e.g., Victorian Equal Opportunity & Human Rights Commission 2008; Brooker & Lawrence 2012; Watkins *et al.* 2012). Due to the complexity of each difficulty, many of these studies focus their analysis on exploring single issues. However, these difficulties are not isolated circumstances, but experiences that overlap and interact. For instance, as Fozdar and Hartley (2013) describe, difficulties with the English language can restrict refugees' access to sustainable, rewarding employment, instead limiting them to low-skill or dangerous jobs that can affect their health. Similarly, limited English language skills can leave refugees isolated from their local communities and support networks (e.g., Casimiro *et al.* 2007). As well as overlapping with other difficulties, a single type of challenge is not likely to be experienced in a uniform way, but is likely to reflect each young person's individualised context. It is likely that helping young people build their

English language skills will help them overcome other challenges, and vice versa. It is also likely that the help needed will vary depending on each young person's contexts.

Learning the English language is particularly important for refugee youth in educational settings. In the Australian context, mastering the English language is essential for anyone hoping to achieve educational and occupational success. Australia is an English-speaking country, and although migrant and indigenous groups own 500 other birth languages, all formal education is in English. The complexity of the English language increases with successive year levels of education, so that a Year 9 student (middle high school) is expected to have mastered a relatively complex understanding of academic English. Compared with conversational English, academic English is more cognitively demanding, less forgiving of errors, and relies on difficult contextual cues. Students who are competent in conversational English but have limited academic English skills will not only find school tasks difficult, but will struggle to progress to advanced levels of education, as Scarcella (2003) demonstrates in her analysis of an international student's email to a professor. These difficulties are especially pronounced for refugees who have had disrupted education, or those whose limited conversational English skills cause them to miss important academic cues from their teachers.

Under the Australian humanitarian program, refugees are granted 510 hours of English language lessons in specialised language schools, with the possibility of 400 more hours. Language schools vary in the levels of extra tuition and support available, depending on funding and community resources. Graduates of language schools take one of three pathways through their subsequent formal education, each of which features its own benefits and difficulties for refugees. Minors (under 18) are enrolled into age-matched classes in mainstream schools. Regardless of their prior experience with the English language, they are expected to progress through school at the same rate as their classmates, performing at comparable academic levels. This can be confronting for displaced youths, especially those who have already attained adult-like non-academic responsibilities in their own country or in transition (Matthews 2008; Dumenden & English 2013). Despite increasing awareness and support for refugees in mainstream schools, many teachers feel that more time and resources are needed for these students to perform at the same academic level as their native-English speaking classmates (Windle & Miller 2012).

Graduates of the language schools who are over 18 are not eligible for mainstream school entry. Instead, they are able to enrol in alternative pathways in specialist secondary colleges to undertake bridging courses and vocational training that gives them entry into tertiary courses in TAFE or university. Navigating appropriate pathways through bridging courses and TAFEs can be difficult for people who have limited English, have experienced disrupted education, or have poor advice ([Authors] 2012; Fozdar & Hartley 2013). The specialist high school that our participants attended offered pastoral and academic support in navigating these pathways.

A third educational pathway is offered through universities. A requirement of entry to Australian universities is that students have obtained a Certificate of Education (i.e., complete their final year of high school) or an equivalent certificate from a TAFE or overseas institution. There is an expectation that students attending university have a more sophisticated understanding of academic English than those at mainstream high schools or specialist schools. Several universities now offer scholarships and entry programs for refugees, to improve refugee access to tertiary education. However, unlike high schools and vocational colleges, very few universities offer ongoing specialised or pastoral support (e.g., help with enrolment, orientation to campus, language or financial support; Earnest *et al.* 2010), or track these students' progress into and through their degrees.

There is a benefit, then, in understanding the varied ways in which young refugees' language-related challenges are experienced, especially across varied educational settings that differ in support and expectations. To our knowledge, very few studies examine the relationships between refugees' challenges (with the exception of Fozdar & Hartley 2013), and none consider the relative magnitude or impact of different types of challenges, despite the usefulness of such information for developing support programs for refugees. Digital media offer sophisticated methods for investigating this issue, by overcoming issues of language barriers and helping participants to organise their thoughts in authentic ways.

### ***The role of digital media***

The United Nations Convention on the Rights of the Child (1989) mandates that refugee children and young people have the right to be involved in the construction of research knowledge and processes that affect their lives (Lawrence *et al.* 2015). Researchers have a responsibility to help young people's voices be heard in those knowledge constructions, and to help the young person express their experiences in meaningful and authentic ways. These aims are difficult to achieve with traditional research tools in research with refugees. For instance, established rating scales risk creating culturally inaccurate interpretations of the refugees' experiences if the scale does not adequately reflect the cultural values and practices of the individual (Hollifield *et al.* 2002; Schwartz 2009). Further, face-to-face interviews can be intimidating for a vulnerable young person whose traumatic experiences have led to a strong mistrust of authority (Ní Raghnalláigh 2013; Lawrence *et al.* 2015), especially if the dynamic of the interview reflects the interrogation-style interviews associated with entry to the country (Van Liempt & Bilger 2012). These issues are further confounded for refugees who are not confident in their English language skills, who misunderstand questions or become concerned about consequences of incorrect language use in their answers.

In acknowledgement of these issues, researchers of refugee experiences are turning to innovative, digital tools that help refugees articulate their experiences in more meaningful ways. Sharp *et al.* (2007) worked with a team of refugee high school students to create a video about their experiences of discrimination while settling in Australia.

Rodriguez-Jimenez and Gifford (2010) used digital photos and interviews to develop a series of short films with 16 young men from Afghanistan about topics such as belonging and identity. Lawrence *et al.* (2016) used computer assisted interviews to help unaccompanied minors develop profiles of the interacting elements of their wellbeing. Dodds *et al.* (2010) used computer assisted interviews to ask primary-school aged Somali children living in Melbourne to make paired comparisons about their academic strengths and skills. Each of these approaches allowed for meaningful communication between refugee and researcher about complicated and personal topics, without being limited by language barriers or cultural insensitivities.

For the current study, we turned to a conceptual mapping task as a way of asking young refugees about the relative size of, and experiences with, their challenges during settlement. The amount of information that can be portrayed in a concept map makes it ideal for communicating about complex topics. Concept mapping tasks have been used in research to show the ways in which students build connections and distinguish between concepts in complex academic topics (Eppler 2006; Daley & Torre 2010; Novak 2010; Yaman & Ayas 2015). Further, in concept mapping tasks, language takes a secondary role to the use of imagery such as using specific locations on the map to indicate hierarchy or order. The reliance on imagery over prose makes concept maps especially helpful for people with limited language skills wanting to convey their understanding of a complex idea (Liu *et al.* 2010; Liu 2011). A digital concept map has the extra benefit of remaining relatively easy to arrange and organise. As new ideas emerge, or if one concept is introduced to the map at a time, each concept can be reordered without erasing or removing other concepts in the map. The computerised concept map in our study allowed our participants a way to organise their challenges and distinguish between them in terms of their size. Once completed, the map became a visual aid to help participants think about their biggest challenge and elaborate on their experiences.

### **The current study**

The aim of the current study was to further scholarly understanding of young refugees' multiple challenges during settlement, by using a computerised task that assisted refugees to distinguish between their challenges and to elaborate on their experiences in follow-up questions. We focused specifically on the English language challenge as a major challenge for young refugees in Australia, in terms of its size relative to other challenges and how young people experienced this challenge. Our two research questions were:

- (1) What is the magnitude (size) of English language challenges for young refugees relative to other challenges during resettlement? Does this vary across different educational or cultural contexts?
- (2) How do young refugees' experiences with their English language challenges vary? Do these experiences vary across different educational or cultural contexts?

The study brought together three samples that were recruited differently but all constructed concept maps and responded to qualitative questions about their biggest challenge within the same computer-assisted interview program '*Pathways through Education*' (Brooker *et al.* 2010) as part of a set of studies ([Authors] 2012; [Author] 2013; [Author] 2014). Any cultural differences between the three samples were not representative of systematic demographic differences but of the cohorts available at the times of the research. Analyses were confined to the concept mapping and associated qualitative data related to the young refugees' challenging experiences with the English language.

### **Method**

#### **Participants and recruitment**

Participants were 74 young people (40 female, 34 male) in one of three separately recruited samples. In the first sample were 30 teenagers (17 female, 13 male) studying in mainstream high schools and aged between 15 and 19 ( $M = 17.50$ ,  $SD = 0.90$ ). They were in year levels 9 (3 participants), 10 (8), and 11 (9). They had each been attending high school for at least one semester at the time of their interview. Twenty-four were born in countries in the Middle East or Near East (Afghanistan, Iran and Iraq), five were born in Africa (Ethiopia, Guinea, and the Ivory Coast), and one was born in Asia (Burma). These students were all graduates of a transition program developed by the Victorian Foundation for Survivors of Trauma (VFST), *Ucan2* that offers similar support to that offered by specialised high schools (VFST 2011; Beadle 2014), including academic support and assistance finding part-time jobs. A *Ucan2* staff member introduced the students to the study and asked for their permission for us to contact them and arrange a time to meet. Each interview took place at a time and location that best suited the participant (e.g., in their home, a public library, a local community centre, or their school), and lasted between 20 minutes and 1 hour.

In the second sample were 32 young adults (18 female, 14 male) studying in a specialist high school that offers bridging and vocational courses for adult immigrants, in Adelaide, Australia. They were aged between 18 and 29 ( $M = 21.87$ ,  $SD = 3.36$ ). Nine were born in countries in the Middle East or Near East (Afghanistan, Iran), 13 were born in Africa (Burundi, DR Congo, Rwanda, Somalia, Sudan), and 10 were born in Asia (Bhutan, Burma, Cambodia, China, Vietnam). Most had attended high school prior to living in Australia, although 14 never completed high school and three had never completed primary school. They completed the computerised interview in one of four class sessions at the specialist high school. Each session comprised up to 12 participants at a time, with two interviewers available to help with any questions and to assist students to personalise the experience. These sessions lasted between 30 and 40 minutes.

In the third sample were 12 young adults (9 female, 3 male) studying at university. They were aged between 19 and 29 ( $M = 21.92$ ,  $SD = 3.15$ ). They were studying nursing (5), education (2), accounting, arts, biomedical science, information technology and media. These 12 were

all part of a close Karen community that had settled in Melbourne, Australia from refugee camps at the Thai-Burma border. They had all completed their Certificate of Education (high school or equivalent) in Thailand or Australia. We attended a local church meeting of a Karen refugee community and invited any interested students to a small group session at the church a week later. Three researchers were available at the session to give individualised assistance. Two other students opted to meet a researcher at another time and place (i.e., in their home, at their university). These interviews also lasted between 20 minutes and 1 hour.

### Procedure

In the computer program, each participant first constructed a concept map of the challenges s/he faced. The program presented a list of eleven challenges, labelled: English language, money, family, health, skills, time management, discrimination, other people's expectations, culture, school tasks, and school rules. These eleven challenges were extensively piloted with other young immigrant and refugee students and in consultation with refugee advocates (Brooker 2014). Participants also could create and label other challenges and include them in their concept map. They could move each challenge into one of three locations on the map to distinguish between them in terms of size. They could move a challenge into the central area for "bigger" challenges and a peripheral area for "smaller" challenges. Any items that were "not a challenge" could be left in the list and not included in the concept map.

When the participant had completed their concept map, the program represented the map on a following screen along with the question: "Which of these is your biggest challenge?" Participants typed their response into a designated space below the map. Two follow-up questions, presented on two subsequent screens, prompted for further elaboration about his or her experience with that biggest challenge: (i) "How does your biggest challenge affect the things you do at school?" and (ii) "How does your biggest challenge affect the way you feel about school?" These qualitative questions were piloted with other young immigrant and refugee students, and were deemed appropriate for novices of the English language.

### Measures and analysis

Quantitative analyses addressed the first research question of the magnitude of English language relative to other challenges, by allocating a numerical value to the locations of the eleven challenges in each participant's concept map: 2 = "bigger challenge", 1 = "smaller challenge" and 0 = "not a challenge". These data were analysed for all 74 participants using a Rasch analysis: the RUMM2030 software program developed by Andrich and colleagues (Andrich *et al.* 2009; RUMM Laboratory 2017). Rasch analyses generate unidimensional models to explain how much each respondent endorses individual items relative to the rest of the items in the set and relative to other respondents. It indicates the fit of the unidimensional model to the data, with a good fitting model indicated by a non-significant

Chi-Square. The Rasch model locates both the data and the participants along the same dimension, indicating those with higher scores who had endorsed more items. Rasch models have been used to examine unfolding patterns of endorsement in other studies of social issues. Hwang *et al.* (2010), for example, used Rasch analysis to demonstrate the changing acculturation attitudes for Chinese-American teenagers and their mothers. Teenagers who endorsed a different set of cultural items from their parents experienced a greater distancing from their parents than those who endorsed the same set of cultural items. In our study, the Rasch analysis was used to identify items that were more readily endorsed as challenges in relation to the other challenges (i.e., were frequently included in the maps, and were frequently located as bigger challenges in the maps). Taking each participants' location score in the Rasch model, we then used Analysis of Variance to identify any differences in the ways in which groups were distributed throughout the model: for gender, educational setting (the three samples), cultural background (region of birth) and both age and time spent in Australia (years) as covariates.

Qualitative analysis addressed the second research question, about refugees' experiences with their challenges, in two separate processes of thematic analysis, following Clarke and Braun's (2014) depiction of thematic analysis. First, we took a "top-down" approach (Clarke & Braun 2014, p. 1950) to code participants' responses to the question "Which of these is your biggest challenge?" into one of the eleven challenges of the concept map, in order to identify those for whom English was the biggest challenge. Second, we took an "inductive (working bottom-up from the data)" approach (p. 1950) to analyse students' responses to the questions "How does your biggest challenge affect the things you do at school?" and "How does your biggest challenge affect the way you feel about school?". This involved a systematic coding of responses that grouped comments as expressed into distinct themes of experience. Three themes emerged from the comments: (i) schoolwork, (ii) communication and social lives, and (iii) employment. We used Chi-Square analysis to test whether different proportions of various groups used the different themes in their accounts, for gender, educational setting (the three samples), and cultural background (region of birth). We report the Adjusted Standardised Residuals ( $\hat{\epsilon}$ ) to indicate the strength of any significant associations, where  $\hat{\epsilon}$  of greater magnitude than  $\pm 2.0$  indicates the statistical differences in the comparative proportions of groups, following recommendations by Haberman (1973).

## Results

### Descriptive statistics

The three samples differed in age, time lived in Australia, and cultural background. The students studying in mainstream high school were younger ( $M = 17.50$ ,  $SD = 0.90$ ) than those studying at the specialist school ( $M = 21.88$ ,  $SD = 3.36$ ) and university ( $M = 21.92$ ,  $SD = 3.14$ ),  $F(2, 73) = 171.61$ ,  $p < .001$ . The students studying at high school had also lived in Australia for fewer years ( $M = 1.61$  years,  $SD = 0.52$ ) than those studying at the specialist school

( $M = 2.37$ ,  $SD = 2.17$ ) and universities ( $M = 5.02$ ,  $SD = 1.11$ ),  $F(2, 73) = 21.34$ ,  $p < .001$ . More students in the high school sample were born in countries in the Middle East or Near East, and fewer from African countries, than in the specialist school,  $\chi^2(2, N = 62) = 17.69$ ,  $p < .001$ . The university sample all shared the same cultural background (Karen).

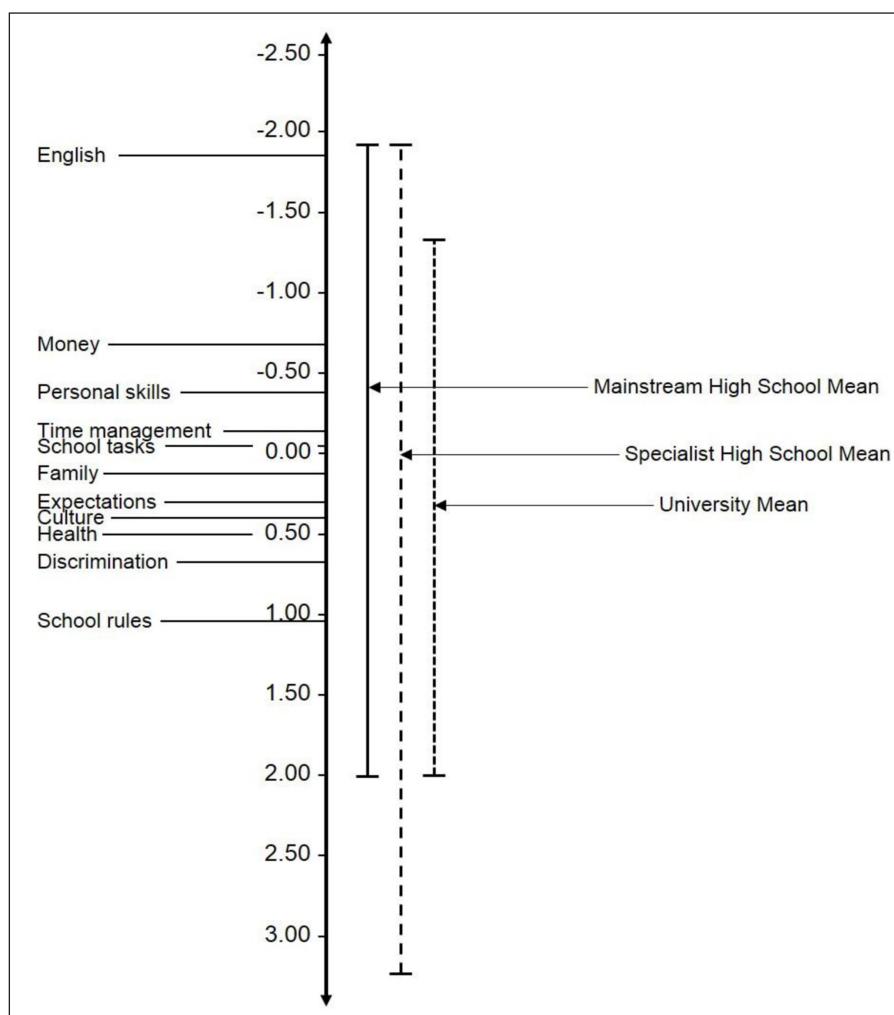
On average, the participants included 6.81 challenges ( $SD = 3.19$ ) in their concept maps, ranging from 2 (for three people) to 14 (for one person). The number of challenges included in the concept maps was relatively consistent, with no statistical differences for the three samples,  $F(2, 73) = 2.21$ ,  $p = .12$ , or for gender,  $F(1, 73) = 0.71$ ,  $p = .40$ , or region (African, Middle or Near Eastern, Asian),  $F(2, 73) = 1.65$ ,  $p = .20$ . Participants who had lived in Australia for longer, or who were older included more challenges in their maps than younger or more recent arrivals, however these correlations were only weak: for age:  $r = .28$ ,  $n = 74$ ,  $p < .05$ ; for time lived in Australia:  $r = .28$ ,  $n = 74$ ,  $p < .05$ .

**Research Question 1: English language was the biggest challenge, for all three groups**

The Rasch analysis generated a good fitting unidimensional model of the 11 challenges and the 74 participants' endorsement of those challenges,  $\chi^2(22, N = 73) = 22.22$ ,  $p = .45$ . The relative size of each challenge in the model is

shown as they lie along the single line in **Figure 1**. Items that are higher in the figure, with a negative score in the model, were more readily endorsed as challenges (i.e., frequently located in the concept maps as bigger challenges and by more participants). The figure shows that English was the most readily endorsed challenge for the 74 participants. Its negative location on the scale ( $-1.85$ ) is much higher than all other challenges, with money ( $-0.66$ ) as the second-most readily endorsed challenge. School rules ( $1.06$ ) and discrimination ( $0.67$ ) were the least-readily endorsed challenges. They were challenges for fewer participants, and were located as smaller in the concept maps, or excluded as non-challenges.

**Figure 1** also shows the distribution of participants' locations in the model, so that participants located lower in the figure than a challenge endorsed that challenge. The participants' location scores are presented in terms of the three samples. This is for illustrative purposes only, as all 74 were included in the Rasch model as one group. Participants' Rasch location scores ranged from  $-2.08$ , for two participants who did not locate any challenge as a bigger challenge in their concept maps, to  $3.25$ , for one participant who located all challenges as bigger challenges in his concept map. The majority of participants were located lower than (i.e., had more positive scores than)



**Figure 1:** Unidimensional Rasch model of 11 challenges for 74 refugee students in three separate samples.

English language, indicating widespread endorsement for English as a challenge by the participants.

English emerged as the most readily endorsed challenge, regardless of educational setting, cultural background, time lived in Australia, or gender, but there was a marginal difference for age. Older participants were more likely to endorse items as challenges than younger participants, as indicated by a significant between-subjects effect between Rasch location score and age (as a covariate),  $F(1, 73) = 5.06, p < .05$ . However, there were no statistical differences in the distribution of locations for the three samples (mainstream high school:  $M = -0.43, SD = 1.06$ ; specialist high school:  $M = 0.04, SD = 1.12$ ; university:  $M = 0.25, SD = 1.01$ ),  $F(2, 73) = 1.76, p = .19$ , or for those with different cultural regions of birth (African:  $M = -0.20, SD = 0.97$ ; Asian:  $M = 0.26, SD = 1.21$ ; Middle Eastern:  $M = -0.33, SD = 1.10$ ),  $F(2, 73) = 0.05, p = .95$ , or for time lived in Australia (years; as a covariate),  $F(1, 73) = 1.1, p = 0.29$ . There were also no statistical differences between the distributions of locations in the Rasch analysis between boys ( $M = -0.23, SD = 1.13$ ) and girls ( $M = -0.02, SD = 1.07$ ),  $F(1, 73) = 1.76, p = .19$ .

### **Research Question 2: Experiences of English language challenges varied**

Forty-seven participants (63% of sample) nominated English as their biggest challenge. They each made between one and four comments, from which three themes of experiences emerged: (i) schoolwork, (ii) communication and social lives, and (iii) employment. **Table 1** presents the three themes of participants' experiences with their English language challenges, along with the various coded comments that belonged to each theme, the number of participants who made each type of coded comment, and example quotes.

In **Table 1**, schoolwork was the most frequently mentioned theme of challenging experiences. It predominantly included comments about issues completing assessments, and the types of study practices required to keep up with other students. Communication was the second most frequently mentioned theme of challenging experiences. It predominantly included comments about experiences of social withdrawal or isolation and issues with verbal communication when speaking with other people. A less frequently mentioned experience with English challenges was related to employment. Five participants made comments about how their English difficulties made it difficult to find work.

The three samples differed in the proportions describing each theme shown in **Table 1**, as indicated by significant Chi-Square associations. Fewer students studying at mainstream high school made comments related to schoolwork (50%,  $\hat{\epsilon} = -3.50$ ) than students studying at the specialist high school (91%,  $\hat{\epsilon} = 1.90$ ) or university (100%,  $\hat{\epsilon} = 1.70$ ),  $\chi^2(2, N = 47) = 12.26, p < .01$ . More students studying at high school made comments related to communication (50%,  $\hat{\epsilon} = 2.80$ ) than students studying at the specialist school (9%,  $\hat{\epsilon} = -2.40$ ) or university (22%,  $\hat{\epsilon} = 0.70$ ),  $\chi^2(2, N = 47) = 8.22, p < .05$ . However, there were no statistical differences in the proportion describing schoolwork for

region of birth,  $\chi^2(2, N = 47) = 3.77, p = .15$ , or gender,  $\chi^2(1, N = 47) = 0.91, p = .17$ . Similarly, there were no statistical differences in the proportions using the communication theme for region of birth,  $\chi^2(2, N = 47) = 1.24, p = .54$ , or gender,  $\chi^2(1, N = 47) = 0.70, p = .70$ .

### **Discussion**

In this study, we used a computerised concept mapping task and follow-up questions to ask young refugees about their experiences with their challenges, especially how the size of their English language challenges compared to other challenges. The 74 refugees distinguished between their challenges in similar ways and shared one pattern of endorsement, in which English language was more readily endorsed as a challenge than ten other challenges. Forty seven nominated English language as their single biggest challenge, and their accounts of their experiences varied across the three samples with different educational settings.

Many researchers and advocates emphasise the impact of language barriers on refugees' settlement experiences (e.g., VEOHRC 2008; Watkins *et al.* 2012; Deng & Marlowe 2013; Stroud & Ibrahim 2016). In the present study, English language was not merely a difficulty facing refugees; it was substantially bigger than ten other challenges, and endorsed as such by a diverse group of refugees varying in educational setting, cultural background, and time lived in Australia. These group differences have strong implications for the severity of difficulty with language for young refugees. For instance, there is often an assumption that length of time an individual spends in a country corresponds to his or her language skills, as s/he spends more time immersed in the culture and has more opportunities to practice the language. Similarly, there is often an assumption that refugees attending university have relatively sophisticated language skills, as this is a requirement of entry to Australian universities. However, universities place high expectations on their students in their mastery of academic English, and offer little in the way of ongoing or every-day support (Earnest *et al.* 2010). Our findings suggest that university students, and those who have lived in Australia for longer periods, are in just as much need of language support as other refugees.

Although English was the most readily endorsed challenge, the unidimensional Rasch model is a reminder that refugee youth face a number of challenges at one time. On average, they located six challenges in their maps, and as well as English, they frequently endorsed money and personal skills as challenges. Although these challenges have been identified as challenges by other researchers (e.g., Harris & Marlowe 2011; Correa-Velez *et al.* 2012), very few studies have demonstrated how multiple difficulties relate to each other. Fozdar and Hartley (2013) offer a thorough analysis of the challenges that young refugees face, but these are discussed with reference to literature rather than systematically compared for a single cohort. The concept mapping task was ideal for comparing the relative magnitude of challenges for a cohort of young people.

We focused our qualitative analysis on those who identified English challenges as their biggest challenge. They

Themes	n	Example quote
<b>Schoolwork</b>		
Assessments	21	<ul style="list-style-type: none"> <li>“Just sometimes it takes more time to do homework, because I have to look in the dictionary”. (Rwandan, specialist high school student)</li> <li>“Even I can't do some of my homework, because I don't understand what it is about”. (Afghani, mainstream high school student)</li> </ul>
Study habits	14	<ul style="list-style-type: none"> <li>“I made my homework done on time. I started early. I studied more than others”. (Karen, university student)</li> <li>“I practice and study a lot – my time is taken up each day with extra study and other activities”. (Afghani, mainstream high school student)</li> </ul>
Learning words or tasks	11	<ul style="list-style-type: none"> <li>“Definitely harder and only focus on the task that I have to work on”. (Karen, university student)</li> <li>“To learn computing, English, Maths. Because for English some words I don't know”. (Rwandan, specialist school student)</li> </ul>
Confidence with school work	9	<ul style="list-style-type: none"> <li>“It can make me feel like weak about my study and disappointed”. (Afghani, mainstream high school student)</li> <li>“Sometime really want to run away from school and don't want to talk to anybody”. (Karen, university student)</li> </ul>
<b>Communication &amp; social lives</b>		
Social withdrawal	12	<ul style="list-style-type: none"> <li>“I often don't talk with other students at school in English because I am worried that my English will be wrong and they will laugh”. (Ethiopian, mainstream high school student)</li> <li>“In class, and at lunch time, it makes me sad because I want to talk like them and be like them, but I can't because my English isn't good enough”. (Afghani, mainstream high school student)</li> </ul>
Speaking to other people	12	<ul style="list-style-type: none"> <li>“It is really hard to communicate with others and really hard to express on what I want to say”. (Karen, university student)</li> <li>“Language is bit hard when you [are] new to it because it hard to communicate with other in everywhere workplace, school and in community centre”. (Afghani, mainstream high school student)</li> </ul>
Understanding other people	9	<ul style="list-style-type: none"> <li>“I get a headache often, trying to understand what people say to me”. (Afghani, mainstream high school student)</li> <li>“Sometimes I can't understand what the words mean and what the sentences mean. Sometimes I missed understand the questions and answered the wrong thing”. (Karen, university student)</li> </ul>
<b>Employment</b>		
Job opportunities	5	<ul style="list-style-type: none"> <li>“I am thinking to improve my English and to get a job and to make my family life better”. (Sudanese, specialist school student)</li> <li>“I see other students with jobs, who speak English but aren't as good writing it ... I wonder why I'm so different. Why is it hard for me?” (Afghani, mainstream high school)</li> </ul>

**Table 1:** Three themes identified in 47 refugee students' accounts of their English language challenges.

described a variety of personalized experiences, which together, suggest that English language challenges are not universal. In this instance, they included various difficulties with the refugees' schoolwork, social lives and employment. Comments related to schoolwork, including practical issues such as study routines, and personal issues such as confidence to speak at school, reflect the difficulties that arise from limited academic English skills, which Scarella (2003) described. All participants had completed their 510 hours of English prior to the study. They had relatively good conversational English, in that they could converse in English with the advocates and teachers who recommended them for the study, and several conversed with our interviewers about their experiences and made their point known. Yet, with limited experiences within Australian educational institutions, their academic English skills were limited. Their accounts of their schoolwork

experiences suggest that young refugees would benefit as much from support with academic English as they do from support learning conversational English. As advocates have noted, such support would likely require much more time than the allocated 510 hours (Matthews 2008; Watkins *et al.* 2012).

Considering that the follow-up questions focused on educational experiences, the prevalence of responses related to social lives and employment indicate the importance of these issues for young refugees struggling with English. Certainly, these two experiences reflect the experiences of social isolation (Casimiro *et al.* 2007), and difficulties finding employment (Fozdar & Hartley 2013), which other researchers have flagged as important issues for refugee youth. Social and employment success are also important goals for Australian teenagers and young adults (VFST 2011). Therefore, helping young refugees to

strengthen their English language skills can help them achieve important developmental milestones, and establish a sense of belonging in the Australian culture.

The importance of social success for Australian teenagers might account, at least partially, for the finding that more high school students than university or specialist school students described their English language challenges in terms of their social lives (and fewer described it in terms of schoolwork). Certainly, high school students spend most of their days on school campus interacting with same-aged classmates, whereas university students and those in adult education spend very little time on campus (often due to work and family commitments; Lingard 2007; Bather 2013). The social culture of high school might accentuate feelings of isolation for the refugee high school students, a feeling that could be mitigated as their English language skills, and confidence, improve. An alternative reason relates to the specialised program, *Ucan2*, of which our high school sample were all graduates, and which was designed to prepare students for high school (VFST 2011). It is possible that the program had successfully prepared this sample for high school, including supporting their academic English, so that issues with schoolwork were not as prevalent as for those who had not experienced the program. The need for transition programs such as *Ucan2* has been well documented (e.g., Beadle 2014), yet their widespread implementation is not yet financially possible. Further investigation of the programme's effectiveness is still warranted.

The digital concept mapping task and the follow up questions offered an engaging way for refugees to organise their thoughts about their challenges and articulate their experiences. The two tasks together also offered a way for the researchers to systematically analyse those experiences for a diverse cohort of young refugees. Finding meaningful ways for refugees to participate in this type of research is vital for understanding the issues facing refugees during settlement. Digital media already assist refugees to maintain a sense of stability and connection with family overseas (e.g., Leung *et al.* 2009), and to communicate their exceptional experiences to mainstream foreign communities, advocating for awareness and support (e.g., the Twitter account @AlabedBana, managed by a nine year old Syrian girl and her mother living in Aleppo, had over 360,000 followers). Including refugees' voices in scholarly discussions helps scholars and advocates to identify potential areas of need, and effective means of support, during resettlement. For example, participants' accounts in this study indicate that their schoolwork would benefit from help with identifying English words quickly, and from help interpreting assessment instructions. Existing digital tools, such as online dictionaries and translation apps, already offer means for achieving these tasks. It is possible that using these apps to support students' regular encounters with academic and conversational English will be of benefit to many refugee youth. At this stage, these suggestions are only speculation that require further investigation and evaluation. We anticipate that digital tools will continue to be valuable research methods for these difficult topics. Tasks such as the concept mapping

task can be developed in future studies to explore other aspects of young refugees' experiences, for instance, mapping existing supports for specific challenges or mapping how challenges change over time.

### **Limitations and future directions**

Three potential issues could be perceived as limitations with this study and warrant closer attention. First, the concept mapping task presented the challenges as separate concepts, which meant that our subsequent analysis treated challenges as separate, discrete experiences. Certainly, any separation of these issues is arbitrary, as they are closely intertwined and mutually constrained (Fozdar & Hartley, 2013). The challenge of learning the local language can impact and be impacted by experiences of isolation, discrimination, the strength and breadth of social networks, attitudes and education of people surrounding the individual, duration and type of refugee status, prior education, and prior experience with the language. The decision to present issues as discrete concepts was an attempt to simplify the discussion with our participants about the multiple difficulties that they face, and to prompt them to think about issues that have been raised in isolation in other studies. Future studies would benefit from identifying other ways in which digital tasks can help participants to both distinguish and show connection between their multiple experiences. For example, Eppler (2006) argues that combining concept maps with other visual tools, such as mind maps, conceptual diagrams and visual metaphors, might strengthen students' (or participants) visual literacy and ability to communicate complex issues. This combined approach might be a useful direction for future studies.

Second, in order to conduct this study, we have combined three separately recruited samples that differ in educational settings, cultural demographic, and age. One of the samples was from a single shared cultural background, but the other two comprised diverse cultural experiences, with varied numbers of people representing each cultural background. In order to make any cultural comparisons between these two groups, we could only rely on the broad-stroke, proxy measure of 'region of birth'. These differences make it difficult to identify why differences emerged between the samples. Our decision to combine these samples was because they represent the diversity of refugee cohorts studying in Australia. Future research investigating experiences for different samples of refugee youth might benefit from focusing on, and recruiting from, specific cultural communities. However, recruiting community samples from one cultural group (e.g., snowballing) can create other issues of equity in refugee research (Van Liempt & Bilger, 2012).

Finally, some readers may find a sense of circularity in using English language to ask young refugees about their challenges and for the main answer to be "English language". This circularity is especially problematic in the use of follow-up questions. As already indicated, the participants in this study had good skills in conversational English, as evidenced by their conversations with their advocates and teachers prior to the study, and their

ability to make their point known to researchers during the interview sessions. Their perception of English as the biggest challenge despite their good conversational skills might be understood as the difference between "good" and "fluent" English. This difference might seem minimal to researchers for interviewing purposes, but it is substantial for young people who are competing at high academic levels and applying for jobs.

In summary, the computerised concept mapping task in this study helped young refugees to distinguish between their multiple challenges in terms of size, and to elaborate on their experiences with their biggest challenge, without being restricted by language or limited in authenticity. The study offers evidence that not only supports previous research around the difficulties of the English language, but also demonstrates the dominance of the English language as a challenge relative to other challenges. That refugees from various backgrounds endorsed it as the biggest challenge highlights the need for support with this difficulty for young refugees regardless of their educational setting or time in Australia. Their varied descriptions of their challenge with English suggests that support with learning English is context specific rather than universal. Future research would benefit from continuing to use digital media to help refugees articulate their experiences in ways that further scholarly understanding. Research with digital media would also benefit from evaluating the use of specific digital programs in supporting refugees to overcome issues identified in this research. In both cases, we are confident that digital media such as the computerised concept map will continue to offer valuable means of communication about refugees' experiences as they settle into Australian culture.

### Competing Interests

The authors have no competing interests to declare.

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